



## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Ammonium hydroxide 26 Bc  
**HCI PRODUCT ID NUMBER:** 00081  
**SYNONYMS:** Aqua ammonia, Ammonia aqueous  
**CHEMICAL FAMILY NAME:** Inorganic bases  
**NFPA HAZARD RATINGS(H-F-R) :** 3-1-0  
**HMIS HAZARD RATINGS(H-F-R):** 3-1-0  
**DISTRIBUTOR:** HCI USA Distribution Companies  
**IN CASE OF EMERGENCY CALL:** 1-800-424-9300

**MSDS PREPARED BY:** HCI Technical Resource Center  
St. Louis, MO 63111  
(314) 353-6500

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBERS	Percent
Ammonium hydroxide	001336-21-6	60-61

Remainder consists of non-hazardous and other ingredients below reportable levels.  
Trace impurities and additional material names not listed above may also appear in the  
Regulatory Information Section (Section 15) towards the end of the MSDS. These materials may  
be listed for local "Right to Know" compliance and for other reasons.

### 3. HAZARDOUS IDENTIFICATION

**EMERGENCY OVERVIEW:** DANGER! May cause burns to skin and eyes. Harmful if inhaled.  
Harmful or fatal if swallowed. Ammonia gas may be released at high temperatures.

#### POTENTIAL HEALTH EFFECTS:

**SKIN CONTACT:** Contact with the skin can cause severe irritation or burns.

**SKIN  
ABSORPTION:** No data available

**EYES:** Contact with the eyes may cause burns, tearing, and blindness.

**INGESTION:** Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.  
Ingestion can cause serious burns to the mouth, esophagus, stomach, and other  
tissues which may prove fatal.

**INHALATION:** Inhalation may cause irritation (possibly severe), lack of sense of smell, nausea,



## MATERIAL SAFETY DATA SHEET

Page 2 of 7

vomiting, chest pain, difficulty breathing, headache, lung damage, convulsions or shock.

Symptoms may be delayed.

**MEDICAL CONDITIONS AGGRAVATED:**

No data available

This product does not contain any chemicals reportable under California Proposition 65.  
Components found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT	NTP	IARC	OSHA
Ammonium hydroxide	N	N	N

**4. FIRST AID MEASURES**

**SKIN CONTACT:** Remove contaminated clothing and shoes.  
Wash exposed areas with soap and water.  
Call a physician for burns or irritation.

**EYE CONTACT:** Flush eyes with water for at least 15 minutes.  
Get immediate medical attention.

**INGESTION:** Call a physician immediately!  
Do not induce vomiting. Give 1-2 glasses of water to dilute. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.  
Do not give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air.  
If breathing has stopped, give artificial respiration.  
Give oxygen for breathing difficulty.  
Get immediate medical attention.

**NOTES TO PHYSICIAN:** There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

**5. FIRE FIGHTING MEASURES****FIRE AND EXPLOSIVE PROPERTIES**

**FLASH POINT:** Not applicable °F

**FLASH POINT:** Not applicable °C

**LOWER FLAMMABILITY LIMIT:** 16% (as NH<sub>3</sub>)

**UPPER FLAMMABILITY LIMIT:** 25% (as NH<sub>3</sub>)

**AUTOIGNITION TEMPERATURE:** 1203.8 °F, 651 °C

**FLAMMABILITY CLASSIFICATION:** N/AP

**EXTING MEDIA:** This product is not flammable. Use extinguishing media for



**EATING MEDIA:** surrounding fire.

**FIRE FIGHTING :** Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.  
Cool fire-exposed containers with water spray.

**PROTECTIVE EQUIPMENT:** Use NIOSH-approved self-contained breathing apparatus and complete protective clothing when fighting chemical fires.

**FIRE HAZARDS:** Vapors may form explosive mixture with air.  
Closed containers may build up pressure and rupture if exposed to extreme heat.  
When heated, material will give off ammonia gas. Accumulations of ammonia vapor in confined spaces may explode if exposed to a strong ignition source. Combustion of released ammonia may form nitrogen oxides.

---

## 6. ACCIDENTAL RELEASE MEASURES

---

**SMALL SPILLS:** Eliminate all sources of ignition.  
Contain spill and ventilate area. Absorb on inert media and containerize for disposal using non-sparking tools.

**LARGE SPILLS:** Eliminate all sources of ignition.  
Contain spill and ventilate area. Permit only trained personnel wearing full protective equipment to enter the spill area. Collect the spill in a waste container or remove with a vacuum truck. Prevent spill from entering natural watercourses.

### PROTECTIVE EQUIPMENT SPILL-RELEASE INSTRUCTIONS:

Wear complete protective clothing when cleaning up chemical spills. Spills and releases may have to be reported to federal and/or local authorities. See the Regulatory Information section (section 14) regarding reporting requirements.

---

## 7. HANDLING AND STORAGE

---

**HANDLING:** Avoid contact with skin, eyes, and clothing.  
Avoid breathing product vapors and mists.  
Do not take internally.  
Wash thoroughly after handling this material.  
Use this material only with adequate ventilation.

**STORAGE :** Keep container closed when not in use.  
Store in a cool, dry place.  
This product should avoid direct sunlight.  
Keep away from heat, sparks, and open flames.  
Do not flame cut, braze, or weld container.  
Containers should be grounded.  
Do not store this material above 90 F.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---



---

#### ENGINEERING CONTROLS:

Use a ventilation system to maintain atmospheric concentrations below published exposure limits. Explosion-proof fans should be used in a mechanical-type ventilation system.

#### PERSONAL PROTECTIVE EQUIPMENT

**SKIN:** Wear protective gloves made of neoprene or rubber.  
**EYE :** Wear chemical safety goggles.  
**RESPIRATORY:** If engineering controls do not maintain airborne concentrations below recommended limits, use a NIOSH-approved respirator for organic vapors.  
**OTHER:** Emergency showers, eye-wash stations, and fire blankets should be accessible. Wear protective clothing.

#### EXPOSURE GUIDELINES :

INGREDIENT	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Ammonium hydroxide	25 PPM	35 PPM	50 PPM	N/EST

N/EST = Not established

See 29 CFR 1910.1000 (D) (2) and ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" booklet (Appendix C) for the determination of exposure limits for mixtures. Consult an industrial hygienist or similar professional to confirm that the calculated exposure limits are appropriate.

---

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

---

<b>PHYSICAL STATE:</b>	Liquid
<b>APPEARANCE</b>	Clear, colorless
<b>ODOR:</b>	Ammonia
<b>SPECIFIC GRAVITY:</b>	0.9 @ 25C
<b>SOLUBILITY (IN WATER):</b>	Complete
<b>BOILING POINT (°F):</b>	80.6
<b>BOILING POINT (°C):</b>	27
<b>FREEZING POINT (°F):</b>	-106.6
<b>FREEZING POINT (°C):</b>	-77
<b>MELTING POINT (°F):</b>	-106.6
<b>MELTING POINT (°C):</b>	-77
<b>PRODUCT pH :</b>	11.6 (1N soln)
<b>VAPOR PRESSURE:</b>	561 mmHg @ 20C



VAPOR DENSITY: 0.596  
EVAPORATION RATE: <1  
% VOLATILES: 100

---

## 10. STABILITY AND REACTIVITY

---

**STABILITY:** Stable  
**CONDITIONS TO AVOID:** Keep away from heat, sparks, and open flames. This material should avoid direct sunlight.  
**INCOMPATIBILITY:** Acids, combustible materials, halogens, metals, metal oxides, oxidizing materials  
**DECOMPOSITION:** Ammonia  
Oxides of nitrogen  
**POLYMERIZATION WILL OCCUR:** no

---

## 11. TOXICOLOGICAL INFORMATION

---

**IMMEDIATE EFFECTS:** May cause burns to skin and eyes. Harmful if inhaled. Harmful or fatal if swallowed. The following is based on a 100% solution: AMMONIUM HYDROXIDE: IRRITATION DATA: 250 ug eyes-rabbit severe; 44 ug eyes-rabbit severe; 1 mg/30 seconds rinsed eyes-rabbit severe; TOXICITY DATA: LD50: 350 mg/kg oral-rat; LD50: 91 mg/kg intravenous-mouse  
**CARCINOGENICITY:** No data available  
**MUTAGENICITY:** The following is based on a 100% solution: AMMONIUM HYDROXIDE: MUTAGENIC DATA: mutation in microorganisms-Escherichia coli 10 mg/disc (-S9)  
**EPIDEMIOLOGY:** No data available  
**TERATOGENICITY:** No data available  
**REPRODUCTIVITY:** No data available  
**NEURTOXICITY:** No data available

---

## 12. ECOLOGICAL INFORMATION

---

The following is based on a 100% solution: AMMONIUM HYDROXIDE: ECOTOXICITY DATA: FISH TOXICITY: LC50: 15000 ug/L 96 hours (Mortality) Mosquitofish (Gambusia affinis); INVERTEBRATE TOXICITY: 10000 ug/L NR hours (Mortality) Crayfish (Astacus leptodactylus); ALGAL TOXICITY: 6200 ug/L 9 hours (Abundance) Stonewort (Chara sp); PHYTOTOXICITY: LETH: >2500 ug/L 33 months (Mortality) Duckweed (Lemna minor); FATE AND TRANSPORT: BIOCONCENTRATION: BCF: 34000 M 4-96 hours (Residue) Diatom (Thalassiosira guillardii) 7.4E+9 M

---

## 13. DISPOSAL CONSIDERATIONS

---



## MATERIAL SAFETY DATA SHEET

Page 6 of 7

**RCRA WASTE:** Yes

**RCRA ID NUMBER:** D002 (If pH is >12.5)

**VOC CONTENT (lbs/gal):** Not applicable

**Waste Disposal Procedure:** Discharge, treatment, or disposal may be subject to Federal, State, or Local laws. State and Local regulations and restrictions are complex and may differ from Federal disposal regulation. The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA Classification and the proper disposal method.

---

**14. TRANSPORTATION INFORMATION**

---

**D.O.T. SHIPPING NAME:** Ammonia solutions

**D.O.T. HAZARD CLASS:** 8 - Corrosive material

**DOT ID NUMBER:** UN 2672

**DOT PACKING GROUP:** III

**DOT RQ (lbs):** 1652

**CONTRIBUTING CHEMICAL:** (Ammonium hydroxide)

**OTHER:** Labels required: Corrosive

**IMDG HAZARD CLASS:** 8 - Corrosive materials

**ICAO HAZARD CLASS:** 8 - Corrosive

---

**15. REGULATORY INFORMATION**

---

**TSCA (Toxic Substance Control Act):** yes

**SECTION 311/312 HAZARD CLASS:** Immediate (acute) health hazard

**WHMIS CLASSIFICATION (CANADA):** Class E

**FOREIGN INVENTORY:** EINECS (European Inventory of Existing Commercial Chemical Substances)

**ADDITIONAL REGULATORY INFORMATION**



This product does not contain any chemicals reportable under California Proposition 65.

**MASSACHUSETTS SUBSTANCE LIST:**

Ammonium  
hydroxide

**NEW JERSEY SUBSTANCE LIST:**

Ammonium  
hydroxide

**PENNSYLVANIA HAZARDOUS SUBSTANCE LIST:**

Ammonium  
hydroxide

**SARA TITLE III (Superfund Amendments and Reauthorization Act):**

<b>INGREDIENTS</b>	<b>CAS NUMBERS</b>	<b>Section 313</b>	<b>Section 302</b>
Ammonium hydroxide	001336-21-6	Y	N

---

## 16. OTHER INFORMATION

---

**CREATION DATE:** 03/19/1997

**REVISION DATE:** 12/29/1999

### **DISCLAIMER:**

The information herein is presented in good faith and is believed to be correct as of the date hereof. However, HCI makes no representation as to the completeness and accuracy thereof. Users must make their own determination as to the suitability of the product for their purposes prior to use. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature with respect to the product or to the information herein is made hereunder. HCI shall in no event be responsible for any damages of whatsoever nature directly or indirectly resulting from the publication, or use of, or reliance upon the information contained herein.